

CLAIMS

we
claim:

1. An oral mandibular advancement appliance comprising:

an upper tray comprising an anterior portion, and left and right side posterior portions having troughs for receiving a patient's posterior maxillary teeth;

a lower tray comprising an anterior portion, and left and right side posterior portions having troughs for receiving the patient's posterior mandibular teeth;

a securement means received in said upper tray troughs and said lower tray troughs for securing the trays to said maxillary and mandibular teeth, respectively, the securement means comprising impression material; and

a connection means, extending between the anterior portion of said upper tray and a posterior portion of said lower tray, for pulling the lower tray forward relative to the upper tray and moving a patient's mandible forward to an advanced position.

2. An oral mandibular advancement appliance as set forth in Claim 1, wherein the upper tray anterior portion has a trough, for receiving a patient's anterior maxillary teeth, having a lesser width than the width of said upper tray posterior portion troughs, and wherein said lower tray anterior portion has a trough, for receiving a patient's anterior mandibular teeth, having a lesser width than the width of said lower tray posterior portion troughs.

3. An oral mandibular advancement appliance as set forth in Claim 1, wherein said lower tray has a posterior upper surface and said upper tray has a posterior lower surface, and the lower tray further comprises a spacer extending up from said lower tray posterior upper surface for occluding with said upper tray posterior lower surface.

4. An oral mandibular advancement appliance as set forth in Claim 3, wherein the connection means is attached to said lower tray spacer.

5. An oral mandibular advancement appliance as set forth in Claim 1, wherein said lower tray has left and right posterior upper surfaces and said upper tray has left and right posterior lower surfaces, and wherein the connection means comprises a generally Y-shaped pull-strap, having left and right wings attached to said lower tray left and right posterior upper surfaces, and having a handle extending forward from said wings and removably connected to said upper tray anterior portion.

6. An oral mandibular advancement appliance as set forth in Claim 5, wherein the lower tray further comprises left and right spacers extending up from said lower tray left and right posterior upper surfaces and engaging said pull-strap wings to attach said pull-strap to said lower tray left and right posterior upper surfaces, and said spacers being for occluding with said upper tray left and right posterior lower surfaces.

7. An oral mandibular advancement appliance as set forth in Claim 5, wherein the upper tray anterior portion comprises a protruding pin, and wherein said pull-strap handle comprises a plurality of holes for receiving the protruding pin for adjusting the amount of forward advancement of the lower tray.

8. An oral mandibular advancement appliance as set forth in Claim 1, wherein said upper tray has a flexible anterior portion for allowing the upper tray to be flexed to move the upper tray left and right side posterior portions toward or away from each other.

9. An oral mandibular advancement appliance as set forth in Claim 1, wherein said lower tray has a flexible anterior portion for allowing the lower tray to be flexed to move the lower tray left and right side posterior portions toward or away from each other.

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1 10. An oral mandibular advancement appliance as set forth in Claim 1, wherein
2 said upper tray has a non-flexible anterior portion, and is provided in a wide variety of
3 sizes.

1 11. An oral mandibular advancement appliance as set forth in Claim 1, wherein
2 said lower tray has a non-flexible anterior portion, and is provided in a wide variety of
3 sizes.

1 12. An oral mandibular advancement appliance as set forth in Claim 1, wherein all
2 interior surfaces of said lower tray are texturized for securement of said impression
3 material to said lower tray.

1 13. An oral mandibular advancement appliance as set forth in Claim 1, wherein all
2 interior surfaces of said upper tray are texturized for securement of said impression
3 material to said upper tray.

1 14. An oral mandibular advancement appliance as set forth in Claim 1, wherein the
2 connection means has a handle extending forward from the anterior portion of said
3 upper tray, for engaging the connection means from external to a patient's mouth.

4 15. An oral mandibular advancement appliance as set forth in Claim 1, wherein the
5 upper tray has an anterior portion, and wherein the connection means comprises a
6 handle protruding at least one inch forward from the upper anterior portion, for
7 protruding from a patient's mouth.

1 16. An oral mandibular advancement appliance comprising:

2 an upper tray comprising an anterior portion, and left and right side posterior portions
3 having troughs for receiving a patient's posterior maxillary teeth, and a flexible anterior
4 portion for allowing the upper tray to be flexed to move the upper tray left and right side
5 posterior portions toward or away from each other;

a lower tray comprising left and right side posterior portions having troughs for receiving the patient's posterior mandibular teeth and comprising a flexible anterior portion for allowing the lower tray to be flexed to move the lower tray left and right side posterior portions toward or away from each other;

a securement means received in said upper tray troughs and said lower tray troughs for securing the trays to said maxillary and mandibular teeth, respectively; and

a connection means, extending between the anterior portion of said upper tray and the posterior portion of said lower tray, for pulling the lower tray forward relative to the upper tray and moving a patient's mandible forward to an advanced position.

17. An oral mandibular advancement appliance as set forth in Claim 16, wherein said lower tray has a posterior upper surface and said upper tray has a posterior lower surface, and the lower tray further comprises a spacer extending up from said lower tray posterior upper surface for occluding with said upper tray posterior lower surface.

18. An oral mandibular advancement appliance as set forth in Claim 17, wherein the connection means is attached to said lower tray spacer.

19. An oral mandibular advancement appliance as set forth in Claim 16, wherein said lower tray has left and right posterior upper surfaces and said upper tray has left and right posterior lower surfaces, and wherein the connection means comprises a generally Y-shaped pull-strap, having left and right wings attached to said lower tray left and right posterior upper surfaces, and having a handle extending forward from said wings and removably connected to said upper tray anterior portion.

20. An oral mandibular advancement appliance as set forth in Claim 19, wherein the lower tray further comprises left and right spacers extending up from said lower tray left and right posterior upper surfaces and engaging said pull-strap wings to attach said pull-strap to said lower tray left and right posterior upper surfaces, and said spacers being for occluding with said upper tray left and right posterior lower surfaces.

6 21. An oral mandibular advancement appliance as set forth in Claim 19, wherein
7 the upper tray anterior portion comprises a protruding pin, and wherein said pull-strap
8 handle comprises a plurality of holes for receiving the protruding pin for adjusting the
9 amount of forward advancement of the lower tray.

1 22. A method of enlarging a pharyngeal airway space comprising inserting into a
2 patient's mouth an oral mandibular advancement appliance comprising:

3 an upper tray comprising an anterior portion, and left and right side posterior portions
4 having troughs for receiving a patient's posterior maxillary teeth;

5 a lower tray comprising an anterior portion, and left and right side posterior portions
6 having troughs for receiving the patient's posterior mandibular teeth;

7 a securement means received in said upper tray troughs and said lower tray troughs
8 for securing the trays to said maxillary and mandibular teeth, respectively, the
9 securement means comprising impression material; and

10 a connection means, extending between the anterior portion of said upper tray and a
11 posterior portion of said lower tray, for pulling the lower tray forward relative to the
12 upper tray and moving a patient's mandible forward to an advanced position.

1 23. A method as set forth in Claim 22, wherein the upper tray anterior portion has a
2 trough having a lesser width than the width of said upper tray posterior portion troughs,
3 and wherein said lower tray anterior portion has a trough having a lesser width than
4 the width of said lower tray posterior portion troughs.

1 24. A method as set forth in Claim 22, further comprising administering anesthesia
2 to the patient.

1 25. A method as set forth in Claim 22, further comprising incrementally adjusting
2 said connection means to increase and decrease advancement of the lower tray for
3 testing effects of the mandibular advancement appliance on the patient.

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